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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,864	12/28/2001	Paul F.L. Weindorf	10541/502 (V200-0772)	2245

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EXAMINER	
DIAZ, JOSE R	

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/040,864	WEINDORF ET AL.	
	Examiner	Art Unit	
	José R. Díaz	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *43-48,50,51,53,54,56 and 57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *43-48,53,54,56 and 57* is/are rejected.

7)☒ Claim(s) *50 and 51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 53 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear whether the "enhanced diffuser reflector" is the "first polarization scrambling material" (118) located along the light pipe (110) (see figure 1) or the "second polarization scrambling material" (118a-118c) located between LED's (126) and light pipe (110) (see figure 1). Please note that in this Office Action, the enhanced diffuser reflector is the first polarization scrambling material.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 43-44, 48, 54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US Pat. No. 4,909,604) in view of Weber et al. (US 2003/0164914 A1).

Regarding claim 43, Kobayashi et al. teaches a liquid crystal display device, comprising:

a light emitting diode (4B) (see col. 7, lines 30-31);

a light pipe (4A) (see fig. 1);

a light extracting surface (4b) located near a first side (bottom) of the light pipe (see fig. 1);

a diffuser (6) located near a second side (Top) of the light pipe (see fig. 1), where the first and second sides are opposite sides of the light pipe (see fig. 1);

a liquid crystal display (3) (see fig. 1);

a first polarization scrambling material (4D) located along the light pipe opposite the liquid crystal display (see fig. 1); and

wherein light from the light emitting diode (4B) enters the light pipe and passes through the diffuser (6), then backlights the liquid crystal display (3) (see fig. 1).

However, Kobayashi et al. fails to teach a reflective polarizer. Weber et al. teaches that it is well known in the art to include a reflective polarizer (12) between the light pipe (34) and the LCD (15) (see fig. 2) so that the light (38 and 42) from the light

source (30) enters the light pipe (34) and passes through the diffuser (37) (see paragraph [0043]), the reflective polarizer (12), then backlights the liquid crystal display (15) (see fig. 2).

Weber et al. and Kobayashi et al. are analogous art because they are from the same field of endeavor as applicant's invention. At the time of the invention it would have been obvious to a person of ordinary skill in the art to include a reflective polarizer (12) between the light pipe (34) and the LCD. The motivation for doing so, as is taught by Weber et al., is improving the brightness and contrast of the LC display (paragraph [0007]). Therefore, it would have been obvious to combine Kobayashi et al. with Weber et al. to obtain the invention of claims 43-44, 48, 53-54 and 56.

Regarding claims 44 and 56, Kobayashi et al. teaches that the light emitting diode (4B) is located along a perimeter of a circuit board (5A) (see fig. 1 and col. 3, lines 63-66).

Regarding claim 48, Kobayashi et al. teaches that the light emitting diode (4B) has a side reflective orientation with the light pipe (4A) (see fig. 1).

Regarding claim 54, Kobayashi et al. teaches an enhanced specular reflector (4C) disposed near the light emitting diode (4B) and the light pipe (4A) (see fig. 1), where light form the light emitting diode reflects from the enhanced specular reflector into the light pipe (see col. 6, lines 43-45).

Regarding claim 53, Weber et al. further teaches that it is well known in the art to include a light pipe (34) with a light extracting surface (36) and a first polarization

scrambling material comprising an enhanced diffuser reflector (39) located along the light pipe (34) opposite the liquid crystal display (15) (see fig. 2).

6. Claims 45-47 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US Pat. No. 4,909,604) in view of Weber et al. (US 2003/0164914 A1), and further in view of Terao et al. (US Pat. No. 6,342,932 B1).

Regarding claims 45 and 57, a further difference between the prior art and the claimed invention is a flexible circuit board. Terao et al. teaches that it is well known in the art to include a flexible circuit board (12) (see figs. 2 and 3).

Kobayashi et al., Weber et al. and Terao et al. are analogous art because they are from the same field of endeavor as applicant's invention. At the time of the invention it would have been obvious to a person of ordinary skill in the art to include a flexible circuit board. The motivation for doing so, as is taught by Terao et al., is electrically connecting the printed circuit board and the liquid crystal display (abstract). Therefore, it would have been obvious to combine Terao et al. with Kobayashi et al. and Weber et al. to obtain the invention of claims 45 and 57.

Regarding claim 46, Terao et al. further teaches a thermally conductive material (30) between the circuit board (20) and a frame (10) (see fig. 3).

Regarding claims 47, Terao et al. further teaches that it is well known in the art to include LEDs (22) having a top reflective orientation with the light pipe (15) (see fig. 3 and col. 4, lines 48-50).

Allowable Subject Matter

7. Claims 50-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach, disclose, or suggest, either alone or in combination, a LCD device comprising:

a first polarization scrambling material comprising an enhanced diffuser reflector located along the light pipe opposite the liquid crystal display, and

a second polarization scrambling material between the LED and the light pipe.

Response to Arguments

9. Applicant's arguments, see remarks, filed October 25, 2004, with respect to the rejections of claims 43-48, 54 and 56-57 have been fully considered and are persuasive. Therefore, the Final rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of Weber et al. (US 2003/0164914 A1).

Conclusion

10. Applicant's amendment filed on June 14, 2004 necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R. Díaz whose telephone number is (571) 272-1727. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRD
11/4/04

Tom Thomas

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